BALTIC ELECTRONICS CONFERENCE

BEC

TALLINN UNIVERSITY OF TECHNOLOGY

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CLIMATE NEUTRAL BY 2035

THE 19TH BIENNIAL
BALTIC ELECTRONICS CONFERENCE
OCTOBER 2–4, 2024, ESTONIA

TALTECH
THOMAS JOHANN SEEBECK DEPARTMENT OF ELECTRONICS

CALL FOR PAPERS

TAL TECH
DEPARTMENT OF COMPUTER SYSTEMS

TECHNICALLY CO-SPONSORED BY IEEE ESTONIA SECTION

IEEE

IEEE Industrial Electronics Society ies

MW MEAN WELL

LEMONA electronics

KEYSIGHT

TESTHOUSE NORDIC
A dataTec company

DATES AND LOCATION
2–4 October 2024,
Tallinn, ESTONIA

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KEYNOTE SPEAKERS
FERENC ENDER – "Nanosupports
in Flow Reactors for Pharma 4.0"
(Budapest University of Technology
and Economics)
MARCELO GODOY SIMÕES – "Enhanc-
ing Power Electronics Enabled Electrical
Power Renewable Energy Integration for
Flexible Systems" (University of Vaasa)
MAKSIM BUTSENKO – "Machine
Learning Applications in Urban Mobility:
Data-Driven Path Towards Greener
Cities" (BOLT)

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TALTECH.EE/BEC

DESCRIPTION:
BEC2024, the 19th Biennial Conference on Electronics and Embedded Systems, will be held in Tallinn, Estonia on October 2–4, 2024. Tallinn University of Technology has been hosting previous BEC editions since 1987; the aim of the conference is to promote research and development in the field of electronics and embedded systems, particularly in the Baltic Sea region. Tallinn, the capital of Estonia, is unique in terms of its medieval old town, characterized by narrow, curved streets and tiled roofs. First records about Tallinn date back to the beginning of the last millennium. During its long and eventful history, Tallinn has been a remarkable centre of craftsmen, artists and merchants in Europe, belonging to the Hanseatic league.
In addition to state-of-the-art scientific and technical sessions, BEC2024 will include a rich social and networking program in different locations in the city of Tallinn.

THEME
The theme for BEC2024 is "Green and Dependable Electronics for a Sustainable and Resilient World". Indeed, green and dependable electronics and embedded systems are essential for a sustainable and resilient world, and they contribute to address some of the major global challenges that humanity is facing: climate change, sustainability, urbanization, health and well-being. By attending BEC2024, you will be able to: Explore how electronics and embedded systems can contribute to solving these challenges and how they can be designed and deployed in a sustainable, ethical, and inclusive manner; Keep up with the latest trends and developments in electronics and embedded systems; Learn about the emerging technologies and applications that are transforming the field; Witness some of the cutting-edge demonstrations and prototypes of electronics and embedded systems; Update your knowledge on the best practices and standards in electronics and embedded systems; Network with experts from the Baltics and Nordics; And more!

TOPICS
BEC2024 is calling for contributions in the following (not limited to) topics:

- 5G/6G technologies; Cognitive networks; Automation of networks (e.g. self-organizing, self-healing, etc.); RF and optical aspects; Jamming, spoofing, and counter-measures; Cognitive Radio and Software Defined Radio; IoT; Sensor networks; Vehicular and aerial communication and networks; Public safety networks; Implementation methods, energy-efficient/low-power platforms; Energy harvesting (incl. transient/approximate computing); Channel Modeling, Coding and Information Theory, Communication Systems, Detection and Estimation, Massive MIMO, Physical Layer Security, Wireless Power and Information Transfer, Cooperative Communication and Networking, Wireless Network Security and Privacy, Machine Learning for Wireless Applications; implementations and demonstrations.
- Embedded hardware and software systems design, integration, test and validation. Analog, digital and mixed IC design for implementing cyberphysical systems. Simulation, synthesis methods and tools for embedded devices. Secure embedded systems and software, trustworthy integrated circuits. Low power embedded systems. Multi- and many-core systems. Reconfigurable and heterogeneous multi-agent and adaptive embedded systems. Real-time applications of cyberphysical systems. Embedded machine learning and artificial intelligence technologies and applications.
- Theoretical and practical aspects of implementation of power converters in industry and transportation. Modeling, simulation and control of power electronic systems. Distributed power generation, integrated renewable systems, smart grids, microgrids, hybrid- and full-electric vehicles. Electrical machines and drives. Mechatronics. Power systems and high-voltage engineering. Emerging photovoltaic technologies and concepts (including tandem, bifacial, semi-transparent etc.) Nano-, micro-, opto-, and thermoelectric, devices: characterisation, modelling and simulation. Sensor- and low power solutions. Wide-band-gap solutions, photonics, thermoelectricity. Energy harvesting.
- Data acquisition, sensors, signal and data processing, Nondestructive Testing (NDT), Structural Health Monitoring (SHM) and Condition Monitoring (CM) applications, system identification, image processing, multimedia; navigation and positioning, radar, sonar; instrumentation and measurement devices and systems, hardware-, software- and integration aspects.
- Adaptive liquid handling automation; Adaptive automation in bioanalysis/synthesis; Machine learning for image analysis/instrument control; Nanomaterials & smart surfaces in biosensing; Printed electronic sensors/actuators (e.g. jet, screen); Portable platforms (e.g. Lab-on-a-Chip, Point-of-Care devices, wearables); Electrode surface functionalization (e.g. antibody, enzyme, DNA, nanostructure scaffolds)
- Cybersecurity issues across all the other above topics, including but not limited to threat modeling for cyber-physical systems, network intrusion detection in SCADA networks, machine learning-based security monitoring methods for IoT networks, cyber threat detection for industrial control systems, network traffic analysis in power grid control systems, etc.

SPECIAL SESSIONS
- Ukraine based scientists
- Research and Career Development for PhD students and Young Professional

IMPORTANT DATES

Deadline for papers submission	May 17, 2024
Notifications	June 21, 2024
Final papers	July 19, 2024
Deadline for early bird registration	August 30, 2024
Deadline for regular registration	September 16, 2024
Conference dates	October 2–4, 2024

PUBLICATION
- Accepted papers will be submitted for possible inclusion into IEEE Xplore
- Special issue(s): work in progress

CONFERENCE FEES

	IEEE Member*	Non-IEEE Member*
Early bird rate, standard	500 EUR	600 EUR
Regular rate, standard	600 EUR	700 EUR
Student (incl. PhD)	200 EUR	250 EUR

All registrations include participation in the conference program (incl. special sessions), welcome event (October 2), access to materials, lunches, coffee breaks, social event and banquet dinner on October 3 evening.

EXTRAS
Extra page: 100 EUR per page, max 2 extra pages.
Additional guest for welcome event plus banquet dinner ticket: 100 EUR

*Not already an IEEE member or IEEE Student member?
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Electronic membership available for eligible countries, including several
Eastern European countries.